REMARKS

Reconsideration of the application is requested in light of the amendments above and the explanations below.

Of the present claims, prior claims 22-30 and 32 were allowed in the office action. Claims 1, 3, 4, 13, 14, 16, and 21 are canceled without prejudice. New claims 48-54 are added.

The claim amendments are to clarify and simplify issues without diminishment of the scope of protection to which applicants are entitled. Incidental editorial clarifications are made in allowed claims 26-28.

Request for Examiner's amendments in the specification

For updating data of copending applications that are referred to, the following amendments are requested:

Page 1, line 9, after "et al." insert -- , now patent 6,762,385, issued July 13, 2004. --.

Page 4, line 27, after "2003," insert - now patent 6,753,492, issued June 22, 2004, --.

Rejection under 35 U.S.C. 112, second paragraph

All the claims are sufficiently definite and the present amendments are to clarify the language without

additional limitations. For a better understanding of the subject matter involved, please refer to Figs. 2A and 2B and their description for example embodiments.

Amendments are made in all of rejected claims 9, 10, 18, 36 and 41 that are believed to clearly overcome any possible rejection. Please note that claim 18 is principally clarified by the amendments to its superior claim 17.

Further explanation of the Examiner's uncertainty is requested if the rejection is repeated.

Rejections under 35 U.S.C. 103(a)

All of the rejections are traversed.

The significant disparity of fields and intentions between the references themselves and with the invention is discussed further below. However, even if the references were right in front of one of ordinary skill in the electrical arts, it is still not reasonable to assume any of the references suggests a modification of another. Furthermore, any modification that might come from that process does not get one to the invention as claimed.

New claim 48 essentially replaces prior claims 1, 3 and 4, collectively, and should be considered in connection with the stated rejection of any of prior claims 1-11 and 31 as well as any possible rejection of new claims 49-51.

Rejections based on Demissy in view of Cline

Independent claim 48 patentably distinguishes at least because the art of record does not teach or suggest,

in combination with the other claimed elements, a whip-like contact structure that includes a flexible rod with a conductive path on an exterior surface including metal braid or wire with strands bonded to the rod surface by an adhesive at interstitial locations between the strands.

A replacement of the metal rod in Demissy with a rod like Cline's is both not obvious and not anything that would satisfy the claims. One flaw in the Examiner's analysis is that Cline's aircraft static discharge has a rod member 40 with a baked-on conductive coating 41 without suggestion of any strands or interstitial locations between strands. Furthermore, that is an interior element in the Cline structure deliberately contained within another element, body 25, with a lightning diverter strip of a ribbon 60 of conductive aluminum powder on its surface. The rod member 40 and the body 25, and their conductive features, should not be confused. But in any event, even ignoring for the moment the disparate purposes of the references, nothing similar to the mentioned features of the claim is disclosed or suggested anywhere. The Examiner's remark about Cline having something on thermal coefficient of expansion and resistance stability is not understood as relevant to the patentability of any of applicants' claims.

Allowance of independent claim 48 should result in direct allowance of dependent claims 2, 5-10, and 49-51. In addition, features of the dependent claims further support the nonobviousness of the claimed subject matter as a whole.

For example, the content of the adhesives in claims 2 and 5 is not necessarily novel by itself but this art suggests no combination of such material with conductors on a contact rod that is relevant. Prior uses of fiber reinforced plastic (claims 6-10) fail to teach or suggest a

whip-like contact with the structure as claimed. It is not believed reasonable to contend Cline's ribbon has metal strands, particularly with interstitial locations between strands and certainly nothing similar to a metal braid is taught by Cline.

The Examiner's comments about claims 9-12 appear to confuse two different aspects of the disclosed subject matter. Claims 9 and 10 (as well as some other claims but not 11 or 12) include limitations directed to (A) multi-rod structures such as those exemplified by Figs. 2A and 2B and their related description. Claim 10, in addition to that feature, and claims 11 and 12 include limitations regarding (B) two-part whips such as those exemplified by Figs 10-12 and their related description. As to features like (A), the Examiner has stated the Outlaw reference is pertinent and that will be discussed below. As to (B), as in claims 10 and 49-51, applicants believe Cline's structure is inapplicable, as discussed above, and, also, its combination with a metal rod portion like Demissy's, is not in any way obvious. That applies also to independent claim 11.

Independent claim 11 patentably distinguishes at least because the art of record does not teach or suggest a whip-like contact structure that includes, in combination with the other claimed elements, the whip having two parts, joined end to end, of different composition and with a continuous conductive path exteriorly exposed for contact along its length. It is noted the inner end 40a of Cline's rod 40 is joined to the hollow end 22a of base 22 but this does not provide a conductive path that is exteriorly exposed for contact along its length because, for example, the rod 40 and conductive coating 41 are explicitly taught to be contained within an outer part 25 (col. 3, lines 9-

12). The conductor 60 on the outer body is explicitly taught to have a gap between it and the other part 22. Thus, Cline teaches completely away from the invention.

Allowance of independent claim 11 should result in immediate allowance of its dependent claims 12, 15, 17-20, and 31 which add further distinguishing features. Examples of such features will be discussed in response to the Examiner's comments.

Claim 12 has a joint including a metal spine (e.g., element 860 as disclosed in Figs 15-17 and related text) in relation to the two parts of the flexible member that is not reasonably taught or suggested by any prior art. The Examiner's remark about original claims 13 and 14, the subject matter of which is now incorporated in claim 12, is inaccurate in characterizing Cline's disclosure as relevant to the claims. The conductive rod 40 of Cline is disclosed as fiber glass material with a conductive carbon coating, not a metal, and the rod 40 is not disclosed to have any supportive function of a spine.

Claims 15 (now including matter of canceled claim 16) and 17 depend from claim 12 with further limitations. No suggestion is found in Cline for any tapering of the rod 40 or its composition to be spring steel. Nothing suggests the combinations of claims 17 and 18 further including a multirod structure as discussed above and, in 18, the particular forms of conductor bonded to the first rod. As to claim 19, it is not seen that considerations of relative specific strength play any role in Cline's device. Claim 20 includes materials that are individually not novel per se but are not known in the context of anything similar to the claimed combinations. (The ability to use known, available, materials in embodiments of applicants' invention is, of

course, a plus for practical, economical, use of the invention.)

The Examiner's cite of In re Leshin is not believed pertinent here. According to MPEP §2144.07, Leshin supports a finding of obviousness where a particular known material ("a known plastic") is selected to make an object ("a container") "of a type made of plastics prior to the invention". The issue addressed in Leshin is not reached without showing applicants' type of contact structure, with its various characteristics, has been made before of other particular materials of the same classes.

Claim 31 is also linked to 12. No specific Examiner's comment is found. In addition to the above remarks, it is to be noted nothing in the art teaches or suggests a contact structure as claimed with two parts of distinct materials with one part imparting accelerating force to the other after release from flexing against another contact element.

Independent claim 33 patentably distinguishes at least because the art of record does not teach or suggest an air break switch with a whip and latch where the whip has, at least at the tip-end, a specified type of conductor (per lines 14-15 of the claim) on a nonmetal rod with a continuous conductive path to a switch contact. As only applicants have disclosed, features of the whip and latch, as spelled out in the claims, may be applied to known types of air break switches. As to this rejection, the issue to be addressed is what makes it reasonable to modify Demissy's switch (with its conventional all-metal whip as in the background art applicants have discussed) to make it like the claims. The general air break switch art has long been satisfied with the basic characteristics (e.g., conductivity

and durability) of an all-metal whip. Demissy's particular area of interest is one that relies totally on such characteristics. His metal whip is unchanged from the long-time conventional one. What he does is to use such a whip 16 in a combination with a rod 17 provided with a barb 17B. The objects of Demissy include robust enough construction for the purpose of operation when the switch is covered in ice. Nothing in the reference gives any hint of a reason for modifying the whip and, in fact, the reference, for its particular purposes, teaches away from any modification, let alone one similar to that of the claims.

The rejection rests on the proposition that the air break switch art, exemplified by Demissy, obviously is subject to modification due to teachings of Cline regarding a discharge rod. That is wrong, even before one gets to how different any such modification would be from the invention.

Cline's discharger, however one characterizes its structure, is not in any way taught or suggested to be useful in any apparatus (an air break switch or anything else) where there has to be sliding electrical contact by relative motion with another contact element. The Examiner's comments do not address this point and the mention again of Cline's interest in low thermal expansion and stable resistance is beside the point.

Applicants have discussed above how the structure of Cline's discharger is different than the whip of the claimed combinations, including the particular conductors specified in claim 33 and the lack of necessary conductive continuity. Among other things, when Cline teaches specifically having a gap between conductive parts, it cannot be said to be obvious to do the exact opposite. The reference is contrary to and teaches away from the claims.

Allowance of claim 33 should be coupled with allowance of its dependent claims 34-40 and 52 which also add limitations contributing to the unobviousness of the claimed subject matter as a whole. Some examples include the following.

The materials aspect of claim 34 is covered by the above remarks about claim 20. Claim 36 brings in a rod assembly of multiple nonmetal rods unlike any suggestion in the art, including Outlaw which is further discussed below. Claims 37, 38 and 52 depend from claim 36.

Demissy teaches away from claims such as 35, 38 and 52 which call for a combination in which a whip engages a latch at a wheel (in contrast to the barb in Demissy).

Claims 39 and 40 have apparently been misunderstood but are not seen to require amendment. Reference to example embodiments should help. Claim 39 includes a contrast in the rod conductors such as those of Fig. 8 (where the rod itself can be of one part) and other disclosed embodiments regarding two part whips (e.g., Figs. 10-12) with provisions for a relatively better arc withstanding structure at the "initial contact region" than the majority of the tip end. The art has no relevant suggestion for such a combination. Claim 40 is more specific as to embodiments exemplified by Fig. 8.

Rejections based on Demissy in view of Cline and Outlaw

The addition of the Outlaw reference makes the total combination of references sought to be put together even more a mixture of unrelated arts. First, we will explain how the imagined combinations of features still do not bring one to the claimed invention.

Independent claim 41 patentably distinguishes at least because the art of record does not teach or suggest an air break switch that has, in combination with other claimed elements, a whip having a rod assembly of a first nonmetal rod with a surface conductive path that is continuous to a conductive connection to a switch contact, where the first rod has one or more additional nonmetal rods within it and firmly joined at one end with the first rod and, further, spaced from each other at their outer tip ends.

All of claims 41-47, as well as other rejected claims 9, 10, 17, 18, and 36-38 (as well as new claims 49-54) contain related subject matter. The attempt to apply Outlaw's collapsible fishing rod to this aspect of the claimed structures clearly fails.

The distinctions over Demissy and Cline are adequately discussed above. The Examiner seems to believe, erroneously, that the sections of the Outlaw collapsing fishing rod (none of which has a surface conductive path) make obvious a multi-rod structure as claimed (which requires firm joining of the rods rather than a positive need and desire for collapsibility). Again, this is an example of art that teaches away from the claimed invention rather than art that makes the invention obvious.

None of the art suggests a whip and latch arrangement with a conductive wheel on the latch as in, e.g., claims 38, 43, 45 and new claims 52-54. Demissy teaches directly away from such an arrangement and neither Cline nor Outlaw is relevant to electrical contacts with sliding engagement.

It should be further noted that claims 43 and 52-54 now all have a further limitation regarding a latch camming surface that, during a switch closing, acts to move

the whip and latch conductive engagement to the latch rod without contact of the whip with the wheel. A latch camming surface is disclosed, for example, in connection with elements 1036c of Figs. 14A-14C, 1140 of Figs. 18A-18D and 1240 of Fig. 19C.

In any event, a generally known use of wheels to reduce friction is certainly not enough to make obvious the particular combinations claimed.

Further comments regarding nonanalogous art and lack of obviousness

It is believed clear numerous distinctions over the references in any combination exist even giving them the status of analogous art. Plainly, Cline and Outlaw are nonanalogous, as well as otherwise deficient. Having to distinguish over them should not even be necessary. However, applicants have shown that incorporating their teachings fully gets one nowhere near the invention. None of the requirements of a prima facie case of obviousness has been met. MPEP §§2141-2143 are a reasonable summary of some of the legal authority that should clearly result in withdrawal of the rejections.

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The above discussion has summarized and paraphrased some of the claim language for brevity with no intent to alter the scope of the claims themselves.

Allowance of the application as now presented is requested.

Respectfully submitted,

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